

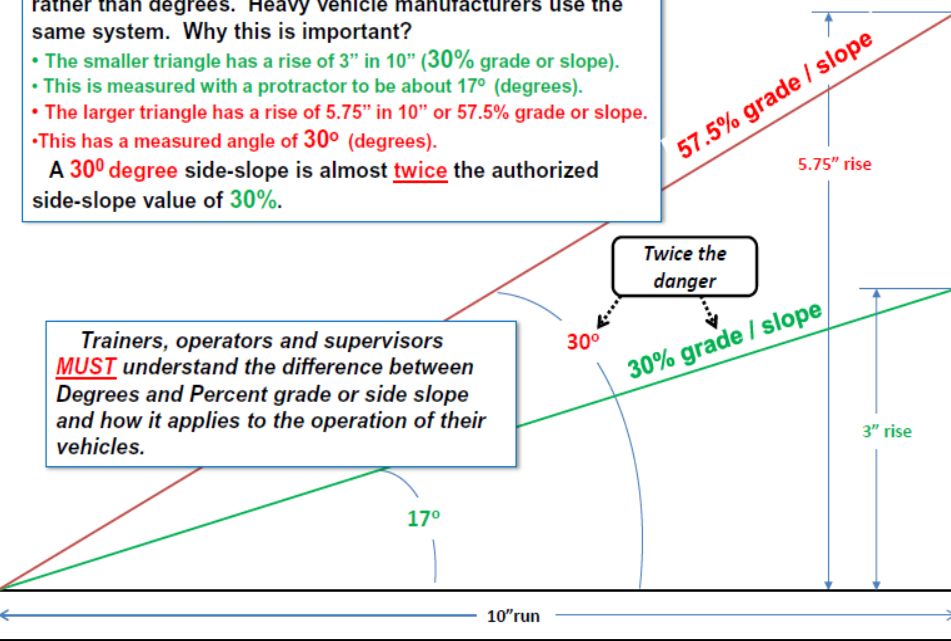
USMC MRAP MISHAP TRENDS 2008 TO 2010

Comparison of Side-Slope Values in % vs. degrees (°)

Slopes are represented by highway engineers as a percent rather than degrees. Heavy vehicle manufacturers use the same system. Why this is important?

- The smaller triangle has a rise of 3" in 10" (30% grade or slope).
- This is measured with a protractor to be about 17° (degrees).
- The larger triangle has a rise of 5.75" in 10" or 57.5% grade or slope.
- This has a measured angle of 30° (degrees).

A 30° degree side-slope is almost twice the authorized side-slope value of 30%.



Trainers, operators and supervisors MUST understand the difference between Degrees and Percent grade or side slope and how it applies to the operation of their vehicles.

MRAP Mishap Summary 2008-2010

<u>Year</u>	<u>Quantity</u>
2008	17
2009	35
2010	26
Total	78

MRAP Mishaps Analysis

<u>Year</u>	<u>Deaths/PPD</u>	<u>days lost</u>	<u>Damages (\$)</u>
2008	2	27	\$606,420
2009	1	232	\$1,812,947
2010	5	101	\$1,042,854

Mishap Incident Analysis 60 USMC Event

3,402,221 incidents

<u>Incident Type</u>	<u>Number</u>
Rollover	11
Crush	13
Collision	15
Fall	11
Not wearing seat belt	7
Maintenance related:	7
Shock/Fire/Neg discharge	7
Other:	7

DoD Mishap Analysis: Experience and Training

<u>Months of Driving Experience</u>	<u>% of Events</u>
0-3	76%
6 +	7%

"When reported, training (lack of) is identified in the narrative for class A/B mishaps 60% of the time"

Produced by the USMC (Safety Division) Navy Safety Center Detachment: The comparison side-slope slide was produced by Mr. Ronald Neumann from TECOM and the DoD driving experience analysis was created by the MRAP Joint Program Office. This and other safety documents can be found at [http://www.public.navy.mil/navsafecen/Pages/ashore/Investigations/Home/USMC Investigations/MarineGroundTactical.asp](http://www.public.navy.mil/navsafecen/Pages/ashore/Investigations/Home/USMC%20Investigations/MarineGroundTactical.asp)